

CBER Science Symposium

# **New Efforts in Counter-Bioterrorism**

Anthony S. Fauci, M.D.  
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**Warfare  
Terrorism  
Biowarfare  
Bioterrorism**

## **Biowarfare versus Bioterrorism**

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- The civilian population is significantly more diverse than the military with regard to age and health.
- Military plans for attacks emphasize vaccine prevention. Civilian attacks will be sudden and unexpected, requiring rapid diagnostics and antimicrobial treatments.
- Potential agents of bioterrorism in civilian settings are more numerous than potential military biological weapons.

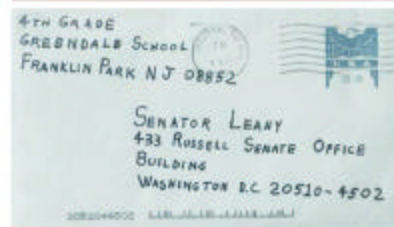
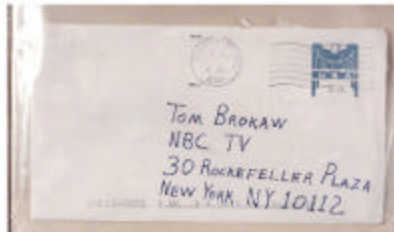
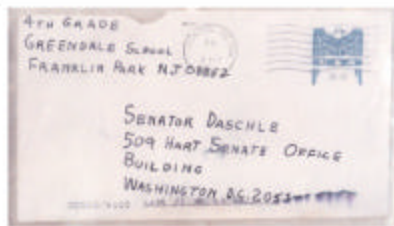
## **Selected Events in the History of Biowarfare and Bioterrorism**

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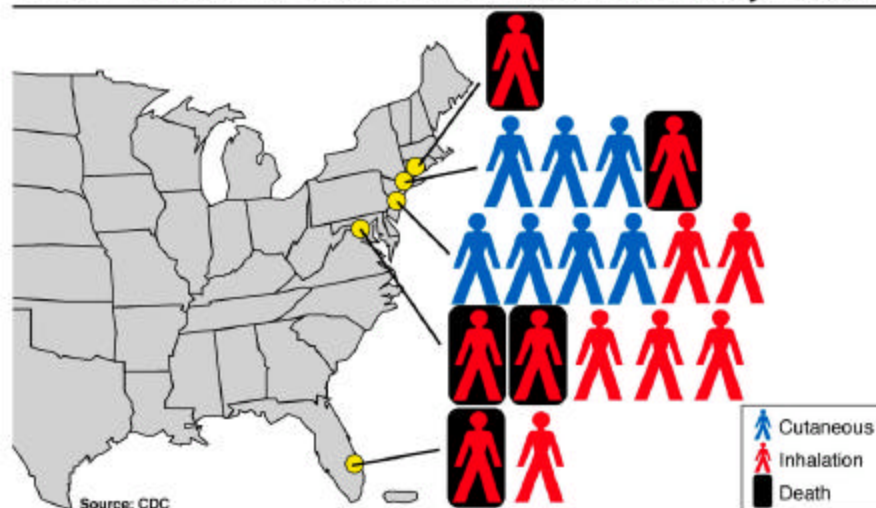
- 1346 - Mongols catapult corpses contaminated with plague over the walls into Caffa (In Crimea), forcing besieged Genoans to flee
- 1347
- 1710 - Russian troops allegedly use plague-infected corpses against Swedes
- 1767 - The British give smallpox-contaminated blankets to hostile Indian tribes during the French and Indian Wars
- 1916 - German agents use anthrax and the equine disease glanders to infect livestock
- 1918 - and feed for export to Allied forces
- 1937 - Japan begins its offensive biological weapons program (Unit 731). Over the course of the program, at least 10,000 prisoners are killed in Japanese experiments
- 1940 - The Japanese drop rice and wheat mixed with plague-carrying fleas over China and Manchuria
- 1969 - President Nixon announces unilateral dismantlement of the U.S. offensive BW program
- 1972 - BWC opened for signature; ratified by U.S. in 1975
- 1979 - Outbreak of pulmonary anthrax in Sverdlovsk, Soviet Union
- 1984 - *Salmonella* contamination of salad bars in Oregon by Rajneesh cult
- 2001 - Anthrax attacks in eastern United States

Source: Monterey Institute of International Studies

## Bioterrorism: Letters Containing Anthrax



## Confirmed Anthrax Cases Associated with Bioterrorism: United States, 2001



## **Impact of 2001 Anthrax Attacks**

- 22 cases (18 confirmed); 5 deaths
- 30,000+ people received antibiotics
- 10,000+ people were recommended to receive antibiotics for at least 60 days
- Psychological impact
- Societal disruption -- Congress, postal system, etc.

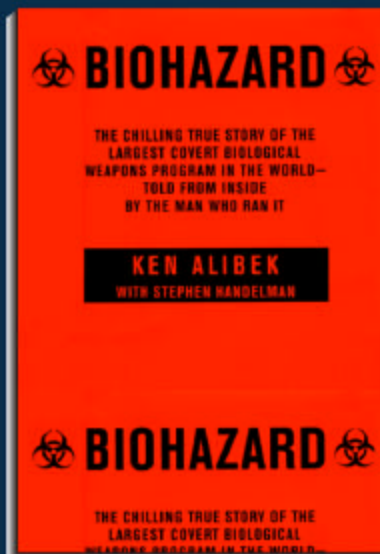
## **The Anthrax Attacks of 2001**



**Biological  
Impact**



**Fear and  
Disruption**



*"Over a twenty-year period that began, ironically, with Moscow's endorsement of the Biological Weapons Convention in 1972, the Soviet Union built the largest and most advanced biological warfare establishment in the world. . . . through our covert program, we stockpiled hundreds of tons of anthrax and dozens of tons of plague and smallpox near Moscow and other Russian cities for use against the United States and its Western allies."*



#### IRAQI BIOLOGICAL AGENTS

Agent	Summary
Botulinum toxin	19,000 liters concentrated (10,000 into munitions)
Anthrax	8500 liters (6500 into munitions)
Aflatoxin	2390 liters concentrated (1580 into munitions)
Wheat smut	Considerable quantities
Perfringens toxin	340 liters concentrated
Ricin	Trials failed
Trichothecene mycotoxins (such as T-2 and DAS)	Research
Enterovirus 70	Research
Rotavirus	Research
Camelpox virus	Research

Source: Science 2002; 297: 1110

# **The U.S. Government Response to the Threat of Bioterrorism**

